VIRGINIA GIS REFERENCE BOOK

General Application Category/Sub Application Name: Registrar

Product /Service/Function Name: Address verification for voter registration

P/S/F/ Description:
An application used by local Voter Registrars to verify address information for registered voters. The application will also display the voting precinct in which a voter is registered. Portions of the application may be publicly available, deployed via an Internet map server.

The Registrar is responsible for verifying a registered voter's address and precinct at least once every two years, and should be completed no more than 90 days before any election. In many cases, a voter has left the area or precinct without notifying the Registrar of a forwarding or new address.

Typically, address verification is accomplished through a mass mailing delivered to each registered voter's address. The Registrar expects to count any returned mailings as registered voters that have moved. (These mailings are not delivered to a forwarding address.) If the mailing is received and the voter's information has changed, the changes must be reflected in the registration database. Comparing the registered voter's database against the returned mailings, and removing the names and addresses of the returned mail from the database will provide the Registrar with the current number of registered voters.

The last step in the address verification process takes place at the voting polls. Here, each voter must present a picture ID with a valid address, which should correspond to a voter's record in the registered voter's database. If the voter is registered, he/she is allowed to vote. If not registered, they cannot vote. If at the wrong precinct, the registered voter will be directed to the proper polling place.

The Registrar application may allow Commonwealth of Virginia registered voters to locate their precinct and polling place. This function currently exists at the State Board of Elections Web Site, **https://www.vipnet.org/voter-lookup/.** The voter is asked to provide his/her Driver's License ID (SSN), Date of Birth, and DMV PIN. Once this information is submitted, a report is generated listing the respective voting district.

Product /Service/Function

1. Spatial Data

Minimum Requirements: TIGER/Line address data, voting districts/precincts. The Virginia Department of Legislative Services provides an FTP service for downloading the most current Voting Districts. The U.S. Census Bureau provides TIGER/Line address data.

Optional Requirements: Proprietary address data (i.e., TeleAtlas), local 911 address data, or tax map parcel address data

2. Attribute Data:

Minimum Requirements: The person's name, drivers license number, mailing address (including rural addressing), district, and date the voter registration card was issued.

Optional Requirements: The person's SSN, gender, date of birth, previous place of registration, voting location, locality (County), precinct, districts (Congressional, Senatorial, House, etc.), voter registration office, absent voter status, handicap status, felony convictions, US citizen status, Circuit Court Judgment of Incapacity, deceased, and party affiliation/registration.

3. Data Acquisition Options (integrated with VBMP digital orthos):

The integration of these data with the VMBP digital orthophotographs will provide a highly accurate base map and provide better positional accuracy of the TIGER line data and Voting Districts.

4. Data Conflation Options (integrated with VBMP digital orthos):

Conflation is the method whereby a geographic feature is adjusted to fit a more accurate base map. This process can occur in variety of ways, with the least sophisticated being a "best-fit" methodology. The best-fit method is a visual inspection or comparison of a geographic feature's current position to where it is or should be located on the more accurate base map.

Another conflation option includes rubber sheeting, a method using control points or existing boundaries to establish the new geographic position of a feature. Finally, the most accurate method of conflating data includes the use of Global Positioning Satellite technology (GPS), or traditional survey instruments to accurately locate each desired object's physical location.

5. GUI / Programming Options:

Graphical User Interface Definition: (ESRI, GIS Glossary, 1996) A graphical method of controlling how a user interacts with a computer to perform various tasks. Instead of issuing commands at a prompt, the user performs desired tasks by using a mouse to choose from `a dashboard' of options presented on the display screen. These are in the form of pictorial buttons (icons) and lists. Some GUI tools are dynamic and the user must manipulate a graphical object on the screen to invoke a function; for example, moving a slider bar to set a parameter value (e.g., setting the scale of a map).

GIS software can be modified utilizing a variety of programming languages or scripting languages and may vary depending upon the system architecture. Languages such as Microsoft Visual Basic are commonly used to invoke macros and customized functions such as GIS queries. Commonly used languages

include: Visual Basic, C++, Java, HTML, ASP, ColdFusion, JSP, PERL, PHP and CGI.

6. Internet Functionality and Options

Internet functionality should include basic GIS functions available in a thin client GIS application, such as ESRI's ArcExplorer (i.e. Zoom In, Zoom Out, Pan, Identify, Query, Thematic Mapping … etc.). Additional functionality may include appropriate hyperlinks to critical and related information on the Internet related to certain queries or operations within the application. A dedicated "needs based" approach to determine user interface options and functionality is highly recommended before actual application work is to begin.

An Internet application allows the organization to share its spatial and tabular information to all authorized users via a familiar Internet Browser interface. This eliminates multiple software license fees. Additionally, the Map Server (Web Server) is the only GIS hardware/software component that would be managed by the localities Information Technology Department.

7. Minimum Technical Requirements

A Basic working knowledge of a leading GIS software, and Internet Browser are required. A Pentium III or greater CPU, with a minimum of 128MB Ram, 16MB Video Card, is required. A higher speed Internet connection is recommended for GIS Internet application deployment and analysis. Most leading GIS software is customizable using MS Visual Basic or other common language. It is suggested that the developer have a working knowledge of (at least) Visual Basic before attempting GUI development.

Optimum Technical Requirements:

In the case where a local government employs a highly capable Information Technology Department, other languages may be considered, such as JSP, Java, Visual Basic, ASP, and Cold Fusion. In most cases, these languages are related to Internet application development. A web developer with three years of experience should be able to customize and/or develop a unique Internet Map Server application.

8. Administrative / Management Requirements:

Management concerns will involve technical support, system maintenance and, of course, human resource management issues of a technical product. These issues are minimized if the maintenance and/or hosting of the application are contracted to a GIS application development and hosting organization. Technical and administrative issues become more critical and consuming when developing and/or hosting an application in-house. General expertise in GIS is suggested if outsourcing application development and hosting. In-house application development and hosting will require GIS specialist human resources, advanced web programming human resources, and significant technical material resources (hardware/software).

9. Cost – Cost/Benefit:

The cost of developing this application (in house) is typically under $6,000. 40% of this cost is attributed to spatial data development and conflation. Programming the application, which includes posting custom queries to the GUI , accounts for the remaining 60%.

10. Standards / Guidelines Summary:

The voter registration database, TIGER line data and voting precinct locations, and any ancillary databases should reflect changes or modifications as soon as realistically possible. This may occur when street is constructed, or if the address of a registered voter has changed within the district.

11. Startup Procedures/Steps:

Application Outline / Blueprint: Application purpose, interface design, functionality, queries and "look and feel" should be determined and documented as an initial step. Stakeholders should be involved in this step.

Data Acquisition: The attribute data compiled from the voter registration database, Tiger data, and voting districts should be obtained from the appropriate sources and normalized. Spatial base map and other data may be generated internally.

Sourcing Determination: Determine entity/entities that will be performing data development functions, application development functions and application hosting functions.

12. Estimated Time Line and/or Implementation (stand alone) schedule:

The estimated time to develop this application is minimal. This can be as little as four to six weeks. Typically this type of application can be developed in about 140 man-hours.

13. Best Practice Examples in Virginia:

None Found.